STATE OF CONNECTICUT

PLAN FOR

ENHANCED PUBLIC SAFETY

COMMUNICATIONS

INTEROPERABILITY

February 27, 2004

MISSION STATEMENT

Provide for statewide telecommunication infrastructure and protocol that will allow timely, efficient and cost-effective communications, (voice, data, video) for all public safety and public healthcare agencies (state, regional and local) to be able to serve as an alert system and provide an appropriate, coordinated response to any and all emergencies.

Background

On January 13, 1982 Air Florida Flight 90 crashed into the 14th Street Bridge in Washington DC. Despite heroic efforts by numerous public safety agencies, 78 passengers and crew died. This event, in the backyard of Congress, highlighted an inherent problem with public safety communications, that is the lack of interoperability* between police, fire, emergency medical service (EMS) and other public safety responders. Congress acted quickly to provide much needed spectrum to public safety for interoperability; 800 megahertz (MHz) International Calling/Tactical (I-CALL/I-TAC) plans were developed and radio systems were put in place.

During the past 20 years, many communications problems have been resolved but too many still exist. Congress has again responded with new spectrum for public safety. However, planning initiatives are needed to provide a coordinated approach to resolving long-standing public safety communications systems inadequacies. The events of September 11, 2001 galvanized the country with respect to domestic preparedness and highlighted the need for a renewed effort to resolve long-standing emergency communications problems.

Any catastrophic event inflicting mass casualties on the civilian population would most likely overcome the response capability of local government. Local governments will call upon state and federal agencies to assist in the response to catastrophic events. Regardless of the type of assistance provided to the local government, responding units need to have an in-place communications system that will both link the leaders to the incident/unified commander as well as allow for functional interoperability among the various responders at the incident scene.

State of Connecticut

Connecticut has several voice communications systems that range from local to regional to statewide.

- Each municipal fire department has a voice communications system as do municipal police departments (if they exist). In some areas, the police and fire departments are on the same system. In most areas they are not. The fire services have a low band (33 & 46 MHz), very high frequency (VHF) band (154 MHz), ultra high frequency (UHF) and 800 MHz conventional and trunked radio systems. The State Fire Chiefs Technical Advisory Committee maintains a statewide 46.16 communications system for dispatch center coordination as part of the State Fire Rescue Disaster Plan (SFRDP). Within the SFRDP, the three regions and eight counties are supported with their local interoperability needs using 33 MHz low band frequencies as the standard with VHF and UHF also in use. Currently, other than the statewide alerting system, there are no common statewide tactical operational frequencies designated or in use. The municipal police departments have limited common regional communications systems depending on the area of the State.

- Every basic ambulance and paramedic unit in Connecticut is required to be equipped with a two-way radio capable of communicating on the UHF Medical (MED) radio system. There

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 * Interoperability is the ability to communicate via radio irrespective of the service (for example, police, fire and EMS) or of the jurisdiction (for example, local, state, federal).

are 13 Coordinated Medical Emergency Dispatch centers (CMEDs) in Connecticut. These serve as communication centers that interconnect emergency medical service (EMS) field personnel with any of the 31 general hospital emergency departments and 3 free-standing emergency medical care facilities in the state using the UHF MED radio system.

EMS personnel are provided medical direction and control by the emergency department physicians using this network. The CMEDs receive the UHF MED radio signal from the ambulances and patch them into the appropriate hospital over dedicated radio-telephone or microwave circuits. The UHF MED system is now over 25 years old. A single frequency, VHF high band (155.340mhz.) system known as "MEDNET" (Medical Network) connects the various CMEDs together and is used for the coordination of emergency medical resources in a disaster or mass casualty incident. It is also used daily for routine incident coordination purposes.

Recently, the Department of Public Health began installation of a new satellite voice communications network known as "MEDSAT" (Medical Satellite). This system will link all of the 31 general hospitals, the Connecticut Hospital Association, the State Office of Emergency Management and the Department of Public Health together. The network provides the users with both a dedicated telephone and a radio communications system that will function without reliance on existing wireline or commercial electrical power utilities. It is anticipated that with additional funding, the 13 CMEDs will be added to the MEDSAT system which was purchased with federal Bio-terrorism funds.

- The Department of Public Safety (DPS) operates and maintains an 800 MHz digital voice communications system primarily for use by the Connecticut State Police (CSP). The system is the primary link among the troopers, the 12 regional troop commands and CSP headquarters. Additionally, DPS operates and maintains an 800 MHz analog I-CALL/I-TAC voice radio system for the use of any Incident Commander as a command and control system. The DPS Communications Center has the capability of patching different voice radio systems together regionally and/or statewide.

- The Department of Public Health (DPH) has both a Health Alert Network (HAN) for surveillance and a Wide Area Network (WAN) capable of transmitting both voice and data on a VHF band system.

- The Connecticut Office of Emergency Management (CT-OEM) has several voice radio systems covering the range of spectrum, an emergency alert system and a microwave broadcast fax capability. As noted above, it is also a partner of the MEDSAT system.

- The Connecticut Department of Transportation (DOT) has multiple voice channels covering the low band VHF, high band VHF, and UHF. The Department utilizes the AM broadcast band to alert motorists to traffic conditions in several parts of the state. The Department also supports radio communications for four airports, and for the Department's moveable bridges over waterways. DOT has two operation centers to monitor statewide DOT communications and traffic, and utilizes four district radio communication centers to coordinate day-to-day operations.

Knowledge of existing protocols (who is responsible for providing what information to whom and how) is limited. An ad hoc communications interoperability working group was organized in May 2002 by Governor Rowland and lead by the Office of Policy and Management (OPM) to address the immediate needs of the first responder community in the State. State and local fire, police, medical, transportation, environmental, information technology and emergency management personnel were represented. The working group focused its collective attention on the following issues:

- Interoperability at the incident/unified command level
- Infrastructure improvements
- Interoperability at the functional level.

Interoperability at the command and control level was deemed to be the first priority. New technology and existing capabilities were researched. The working group determined that the quickest, least expensive course to pursue to obtain interoperability at the command and control level would be to activate the existing I-CALL/I-TAC part of the Department of Public Safety's communication infrastructure.

The I-CALL/I-TAC system was designed to be used not only in Connecticut but also across the United States and Canada. With the infrastructure already in place, all that needed to be done was to procure radios, train the potential users of the system and distribute the radios to those people. All fire chiefs, municipal police chiefs, leaders of EMS units and local emergency management directors have or will have received the training and an 800 MHz radio with the I-CALL/I-TAC frequencies. Each of the 140 primary and secondary public safety answering points (PSAPs) will receive an 800 MHz control station with the same frequencies. All of the Connecticut State Police radios already have the I-CALL/I-TAC frequencies programmed into them. Additionally, the emergency operations centers of the municipalities that are within the Millstone Emergency Planning Zone (EPZ) or serve as a host community for a Millstone event will receive a control station and training.

Plan of Action
Although the establishment of the I-CALL/I-TAC system throughout the State is a major step towards interoperability, there is much more to be done. Two unaddressed issues are mentioned above: infrastructure and functional interoperability. Two more issues have been discussed: data and video streaming capability and the design and development of a statewide communications system that would use a single radio for access. Lastly, the next generation of the interoperability working group needs to be developed. It is recommended that the following issues be addressed:

1. Despite the robust infrastructure in place (34 radio repeaters statewide), there are "holes" in the coverage of the I-CALL/I-TAC system. Additional repeaters and the application of new technology are needed to improve the command and control network. Site locations need to be determined. An effort should be made to co-locate new 800 MHz repeater sites with existing repeater sites used by other state agency communications systems.

2. Provide a system that would allow the tactical level responders to communicate across functional (police, fire and EMS) and geographical lines if needed. As fire departments or police departments provide mutual aid to an adjacent or even distant community, they need to have the ability to communicate on a common voice system.

3. Data communications: voice communications is a major component of a communications system but not the only part. The ability to send and receive data and video that can be used to facilitate a response needs to be established. The ability to transmit and receive data streams via an electronic mode would greatly enhance both information sharing and the alerting process. Command and control would also be enhanced by the capability to use data streams and video to keep others informed on needs, progress and plans.

4. Before an incident occurs, a complete communications system needs to be able to detect, inform and evaluate surveillance type data, particularly in the healthcare arena. The ability to inform the public more rapidly of the steps they need to take to protect themselves also needs to be implemented. A statewide communications system should be able to receive and integrate information that would serve to alert officials of a potential public health crisis. Local reporting sources need the ability to input findings to a central database that has the capability to note and report trends to the Department of Public Health. The system could also be used to alert the healthcare community.

Recommendation

The ad hoc working group has taken the communications interoperability process about as far as it can. An interagency, multi-functional group of technical communications experts and planners need to be chartered to design, fund and establish the ideal communications system throughout Connecticut. The group should be chartered by the Governor or the State Legislature. The group needs to be given wide latitude to explore near-term solutions as well as long-term emergency telecommunication goals. Every effort should be used to make use of existing capability as well as current and future technology.

<u>Submitted by:</u>

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